THE INDEPENDENT
INSTITUTE OF
IIE EDUCATION

MODULE NAME:	MODULE CODE:
ADVANCED DATABASES	ADDB6311

ASSESSMENT TYPE: ASSIGNMENT 1 (PAPER ONLY)
TOTAL MARK ALLOCATION: 100 Marks
TIME ALLOWANCE: 15 Hours

By submitting this assignment, you acknowledge that you have read and understood all the rules as per the terms in the registration contract, in particular the assignment and assessment rules in The IIE Assessment Strategy and Policy (IIE009), the intellectual integrity and plagiarism rules in the Intellectual Integrity and Property Rights Policy (IIE023), as well as any rules and regulations published in the student portal.

INSTRUCTIONS:

1. *The research component of the assessment must be typed as well as adequately and correctly referenced.*
2. *Where images are used for reference, they must be included in the submission in a separate document.*
3. ***The assessment must be submitted through SafeAssign.***
4. ***No material may be copied from original sources, even if referenced correctly, unless it is a direct quote indicated with quotation marks. No more than 10% of the assignment may consist of direct quotes.***
5. ***Please ensure you attach an originality report to your assignment if required.***
6. ***Make a copy of your assignment before handing it in.***
7. *Consult the marking rubric to familiarise yourself with the assessment criteria to ensure you understand all the submission requirements.*
8. *This is an individual project unless stated otherwise in the brief.*
9. *Keep a clear copy of your project in the form of a digital back-up/a clear photocopy/a photograph.*
10. *Pay careful attention to the submission format and additional requirements as stated in the brief. Make sure your submission is neat and presented professionally.*
11. *All submissions must include a stamped and signed cover sheet, your name and student number.*
12. *Follow all instructions on the brief front page including the additional instructions added below.*

ACADEMIC HONESTY DECLARATION
Please complete the Academic Honesty Declaration below.
Please note that your assessment will not be marked, and you will receive 0% if you have not completed ALL aspects of this declaration.

Declaration

	SIGN
I have read the assessment rules provided in this declaration.	
This assessment is my own work.	
I have not copied any other student's work in this assessment.	
I have not uploaded the assessment question to any website or App offering assessment assistance.	
I have not downloaded my assessment response from a website.	
I have not used any AI tool without reviewing, re-writing, and re-working this information, and referencing any AI tools in my work.	
I have not shared this assessment with any other student.	
I have not presented the work of published sources as my own work.	
I have correctly cited all my sources of information.	
My referencing is technically correct, consistent, and congruent.	
I have acted in an academically honest way in this assessment.	

Referencing Rubric

Providing evidence based on valid and referenced academic sources is a fundamental educational principle and the cornerstone of high-quality academic work. Hence, The IIE considers it essential to develop the referencing skills of our students in our commitment to achieve high academic standards. Part of achieving these high standards is referencing in a way that is consistent, technically correct and congruent. This is not plagiarism, which is handled differently.

Poor quality formatting in your referencing will result in a penalty **of a maximum of ten percent** being deducted from the percentage awarded, according to the following guidelines. Please note, however, that **evidence of plagiarism in the form of copied or uncited work (not referenced), absent reference lists, or exceptionally poor referencing, may result in action being taken in accordance with The IIE's Intellectual Integrity Policy (0023)**.

Markers are required to provide feedback to students by indicating **(circling/underlining) the information that best describes the student's work.**

Minor technical referencing errors: 5% deduction from the overall percentage – the student's work contains **five or more errors** listed in the minor errors column in the table below.

Major technical referencing errors: 10% deduction from the overall percentage – the student's work contains **five or more errors** listed in the major errors column in the table below**.**

If both minor and major errors are indicated, then 10% only (and not 5% or 15%) is deducted from the overall percentage. The examples provided below are not exhaustive but are provided to illustrate the error

Required: **Technically correct referencing style**	**Minor errors in technical correctness of referencing style** **Deduct 5% from percentage awarded**	**Major errors in technical correctness of referencing style** **Deduct 10% from percentage awarded**
Consistency • The same referencing format has been used for all in-text references and in the bibliography/reference list.	Minor inconsistencies. • The referencing style is generally consistent, but there are one or two changes in the format of in-text referencing and/or in the bibliography. • For example, page numbers for direct quotes (in-text) have been provided for one source, but not in another instance. Two book chapters (bibliography) have been referenced in the bibliography in two different formats.	Major inconsistencies. • Poor and inconsistent referencing style used in-text and/or in the bibliography/ reference list. • Multiple formats for the same type of referencing have been used. • For example, the format for direct quotes (in-text) and/or book chapters (bibliography/ reference list) is different across multiple instances.
Technical correctness • Referencing format is technically correct throughout the submission. • The correct referencing format for the **module's discipline** has been used, i.e., either **APA,** OR **Harvard** OR **Law.** • Position of the reference: a reference is directly associated with every concept or idea. • For example, quotation marks, page numbers, years, etc. are applied correctly, sources in the bibliography/reference list are correctly presented.	**Generally, technically correct with some minor errors.** • The correct referencing format has been consistently used, but there are one or two errors. • Concepts and ideas are typically referenced, but a reference is missing from one small section of the work. • Position of the references: references are only given at the beginning or end of every paragraph. • For example, the student has incorrectly presented direct quotes (in-text) and/or book chapters (bibliography/reference list).	**Technically incorrect.** • The referencing format is incorrect. • Concepts and ideas are typically referenced, but a reference is missing from small sections of the work. • Position of the references: references are only given at the beginning or end of large sections of work. • For example, incorrect author information is provided, no year of publication is provided, quotation marks and/or page numbers for direct quotes missing, page numbers are provided for paraphrased material, the incorrect punctuation is used (in-text); the bibliography/reference list is not in alphabetical order, the incorrect format for a book chapter/journal article is used, information is missing e.g. no place of publication had been provided (bibliography); repeated sources on the reference list.
Congruence between in-text referencing and bibliography/ reference list • All sources are accurately reflected and are all accurately included in the bibliography/ reference list.	**Generally, congruence between the in-text referencing and the bibliography/ reference list with one or two errors.** • There is largely a match between the sources presented in-text and the bibliography. • For example, a source appears in the text, but not in the bibliography/ reference list or vice versa.	**A lack of congruence between the in-text referencing and the bibliography.** • No relationship/several incongruencies between the in-text referencing and the bibliography/reference list. • For example, sources are included in-text, but not in the bibliography and vice versa, a link, rather than the actual reference is provided in the bibliography.
In summary: the recording of references is accurate and complete.	In summary, at least **80%** of the sources are correctly reflected and included in a reference list.	In summary, at least **60%** of the sources are incorrectly reflected and/or not included in reference list.

Overall Feedback about the consistency, technical correctness and congruence between in-text referencing and bibliography:

Case Study

The following set of relations has been set up for Earl's Kayaking Store specialising in the upgrading of all types of kayaks. At present, the database is small and only includes information about kayaks, customers, upgrades, and kayak upgrades. The relationships between the tables must be derived from the data in each of the tables. The tables and the information required are as follows:

KAYAKS(kayak_id, kayak _type, kayak_model, manufacturer)

CUSTOMER(cust_id, cust_fname, cust_sname, cust_address, cust_contact)

UPGRADES(upgrade_id, upgrade_work, upgrade_date, upgrade_hrs)

KAYAK_UPGRADES (kayak_upgrade_num, kayak_upgrade_date, kayak_upgrade_amt, kayak_id, cust_id, upgrade_id)

Sample Data is shown below:

KAYAKS

KAYAK_ID	KAYAK_TYPE	KAYAK_MODEL	MANUFACTURER
12345	Single Seater	K100	FeelFree
54321	Tandem Seater	J55	Roamer
78945	Fishing Kayak	H9000	Wavesport
98754	Hobie Kayak	A450	Gemini
55311	Canadian Style	L920	Surge

CUSTOMER

CUST_ID	CUST_FNAME	CUST_SNAME	CUST_ADDRESS	CUST_CONTACT
C115	Jeff	Willis	3 Main Road	0821253659
C116	Andre	Watson	13 Cape Road	0769658547
C117	Wallis	Smith	3 Mountain Road	0863256574
C118	Alex	Hanson	8 Circle Road	0762356587
C119	Bob	Bitterhout	15 Main Road	0821235258
C120	Thando	Zolani	88 Summer Road	0847541254

| C121 | Philip | Jackson | 3 Long Road | 0745556658 |
| C122 | Sarah | Jones | 7 Sea Road | 0814745745 |

UPGRADES

UPGRADE_ID	UPGRADE_WORK	UPGRADE_DATE	UPGRADE_HRS
1	Sonar Device	15-JUL-22	5
2	Padded Seats	18-JUL-22	3
3	GoPro Camera Mount	19-Jul-22	10

KAYAK_UPGRADES

KAYAK_UPGRADE_NUM	KAYAK_UPGRADE_DATE	KAYAK_UPGRADE_AMT	KAYAK_ID	CUST_ID	UPGRADE_ID
101	27-JUL-19	R 75	98754	C121	3
102	20-JUL-19	R 30	12345	C120	2
103	23-JUL-19	R 75	55311	C119	1
104	17-JUL-19	R 50	54321	C117	1
105	19-JUL-19	R 30	12345	C122	2

You are required to answer the questions that follow.

Refer to Appendix A at the end of assignment for all Marking Rubrics

Question 1   (Marks: 15)

Management of Earl's Kayaking Store require an Entity Relationship Diagram (ERD) based on the flat files that have been supplied. Your ERD must incorporate all the entities and attributes supplied, as well as establishing the relationships between the entities.

NOTE: It is advised that you use an appropriate drawing tool (e.g. Visio, MS Word, etc.), however you will not be penalised if such tools aren't utilised. If need be, free hand can be used, and a clear and neat screenshot be provided.

Question 2	(Marks: 10)

You will need to create the above tables to complete this **Assignment**. Please create the tables and populate them using SQL Developer or SQL*Plus.

Question 3	(Marks: 10)

Earl's Kayaking Store requires you to create users and grant privileges to use the database. You have been provided with the following details:

Username	Password	Privileges
Tshepo	tmphoabc2023	SELECT ANY TABLE
Mya	mrobertabc2023	INSERT ANY TABLE

Q.3.1	Create the required users and permissions.	(8)
	Note: Additional research might be required in line with the Oracle XE version installed.	

Q.3.2	Explain the importance of separation of duties for the different users.	(2)
	Note: include this as a comment at the end of the code.	

Question 4	(Marks: 10)

Create a SQL query to display the kayak id, customer id, upgrade hours and the kayak upgrade amount. In your query, include the total sales amount by multiplying the upgrade hours by the kayak upgrade amount.

Sample Results

KAYAK_ID	CUST_ID	UPGRADE_HRS	KAYAK_UPGRADE_AMT	TOTAL
98754	C121	10	75	750
12345	C120	3	30	90
55311	C119	5	75	375
54321	C117	5	50	250
12345	C122	3	30	90

Question 5   **(Marks: 10)**

Create a SQL query to display the customer's full name, type of kayak, upgrade hours, upgrade work and the kayak upgrade amount.

Sample Results

CUSTOMER	KAYAK_TYPE	UPGRADE_HRS	UPGRADE_WORK	KAYAK_UPGRADE_AMT
Wallis Smith	Tandem Seater	5	Sonar Device	50
Bob Bitterhout	Canadian Style	5	Sonar Device	75
Thando Zolani	Single Seater	3	Padded Seats	30
Philip Jackson	Hobie Kayak	10	GoPro Camera Mount	75
Sarah Jones	Single Seater	3	Padded Seats	30

Question 6   **(Marks: 20)**

Complete the following:

1.   Create a PL/SQL query that will display the customer id, upgrade work done and the upgrade amount. In your query, only display the results where the upgrade amount is greater than R 50.

2.   Identify the <u>type</u> of cursor used and provide two reasons for its suitability in this query. Provide this information as a comment at the end of your code.

3.   Provide screenshot of query output.

Sample Results

```
---------------------------------------------------------
CUSTOMER ID:      C119,
UPGRADE WORK:    Sonar Device
UPGRADE AMOUNT: R 75
---------------------------------------------------------
CUSTOMER ID:      C121,
UPGRADE WORK:    GoPro Camera Mount
UPGRADE AMOUNT:  R 75
---------------------------------------------------------
```

Question 7   **(Marks: 15)**

Complete the following:

1. Create a PL/SQL query that will display the customer's name, type of kayak, upgrade work and the upgrade date. In your query display the upgrade amount and a discount amount (10%), that will be subtracted off customer *'C121'* final bill only.

2. Provide screenshot of query output.

Sample Output

CUSTOMER: Philip Jackson

KAYAK TYPE: Hobie Kayak

UPGRADE WORK: GoPro Camera Mount

UPGRADE DATE: 27-JUL-19

UPGRADE AMT: R 75

DISCOUNT AMT: R 7.5

Question 8   **(Marks: 10)**

Create a view called **vwCustUpgrades** that will display the combined customer name, kayak type, upgrade work and the customer contact number. In your query, only display the customers whose address contains the word *'Summer'*.

CUSTOMER	KAYAK_TYPE	UPGRADE_WORK	CONTACT
Thando, Zolani	Single Seater	Padded Seats	0847541254

Appendix A

MODULE NAME:				MODULE CODE:
ADVANCED DATABASES				ADDB6311
STUDENT NAME:				
STUDENT NUMBER:				

Question 1	Levels of Achievement				Feedback
Entity Relationship Diagram	**Excellent**	**Good**	**Developing**	**Poor**	
	Score Ranges Per Level (½ marks possible)				
Entities	**3-4**	**2**	**1**	**0**	
	All entities represented in ERD as per flat files supplied.	At least half of the entities represented in ERD as per flat file supplied.	More than half of entities not represented on ERD as per flat file provided.	Not provided	
Attributes	**2**	**1**	**½**	**0**	
	At least 75% of attributes represented in ERD as per flat files supplied	At least 50% of attributes, represented in ERD as per flat file supplied	At least 10% of attributes represented in ERD as per flat file provided	Not provided	
Keys	**4-5**	**3**	**1-2**	**0**	
Award ½ per correctly placed PK.	At least 75% of Keys correctly represented in ERD as per flat files supplied	At least 50% of Keys correctly represented in ERD as per flat files supplied	At least 10% of Keys correctly represented in ERD as per flat files supplied	Not provided	

Award 1 mark per correctly placed FK					
Relationships	**3-4**	**2**	**1**	**0**	
	At least 75% of relationships correctly identified and implemented in ERD	**At least 50% of relationships correctly identified and implemented in ERD**	**At least 10% of relationships correctly identified and implemented in ERD**	**Not provided**	

Question 2	Levels of Achievement				Feedback
Tables & Data Inserts	**Excellent**	**Good**	**Developing**	**Poor**	
	Score Ranges Per Level (½ marks possible)				
Database Schema	**4-5**	**3**	**1-2**	**0**	
	New database schema created; At least 75% of tables created correctly.	**New database schema created; At least 50% of tables created correctly.**	**New database schema created; At least 10% of tables created correctly.**	**Not provided**	
Data values	**4-5**	**3**	**1-2**	**0**	
	All Data successfully created into each table as per flat files supplied.	**Data imported into each table as per flat files supplied; some improvement required**	**Data imported into some tables as per flat files supplied; major improvements required**	**Not provided**	

Question 3	Levels of Achievement				Feedback
Users & Permissions	Excellent	Good	Developing	Poor	
	Score Ranges Per Level (½ marks possible)				
Q.3.1	3-4	2	1	0	
	Users and passwords created successfully; Insignificant to no errors in code.	Users and passwords created successfully; minor errors in code requiring minor modifications	Users and passwords created; major errors in code	Not provided	
Q.3.1	3-4	2	1	0	
	All privileges successfully implemented with insignificant to no errors	Privileges implemented with minor modifications required in code	Privileges implemented with major modifications required in code	Not provided 0	
Q.3.2	2	1	½	0	
	SOD well explained in relation to scenario.	SOD theoretically explained.	SOD partially explained with no appropriate reference to scenario.	Not provided	

Question 4 Mark Allocation	Levels of Achievement				Feedback
SELECT QUERY	Excellent	Good	Developing	Poor	
	Score Ranges Per Level (½ marks possible)				
SELECT Statement	3 - 4	2	1	0	
	Correct SELECT statement; Correct columns selected.	Correct SELECT statement used. At least one column not selected.	SELECT statement used; Most columns not selected.	Not provided.	
Tables	3 - 4	2	1	0	
	Correct Tables used; Linked correctly.	Correct Tables used; Links inadequate;	Most Tables not provided; Links incorrect;	Not provided.	
		Minor corrections required.	Major corrections required.		
Query Output	2	1	½	0	
	Correct output achieved; Output Screenshot provided.	Correct output achieved OR Output Screenshot provided.	Correct output not achieved and/or Output Screenshot provided.	Not provided.	

Question 5 Mark Allocation	Levels of Achievement				Feedback
SELECT QUERY	Excellent	Good	Developing	Poor	
	Score Ranges Per Level (½ marks possible)				
SELECT Statement	**3 - 4**	**2**	**1**	**0**	
	Correct SELECT statement; Correct columns selected.	Correct SELECT statement used. At least one column not selected.	SELECT statement used; Most columns not selected**.**	Not provided**.**	
Tables	**3 - 4**	**2**	**1**	**0**	
	Correct Tables used; Linked correctly.	Correct Tables used; Links inadequate;	Most Tables not provided; Links incorrect;	Not provided**.**	
		Minor corrections required.	Major corrections required.		
Query Output	**2**	**1**	**½**	**0**	
	Correct output achieved; Output Screenshot provided.	Correct output achieved OR Output Screenshot provided.	Correct output not achieved and/or Output Screenshot provided.	Not provided**.**	

Question 6 Mark Allocation	Levels of Achievement				Feedback
	Excellent	**Good**	**Developing**	**Poor**	
	Score Ranges Per Level (½ marks possible)				
Declarations and Variables	**3**	**2**	**1**	**0**	
	Correct variables declared.	All variables declared; One variable is inadequate/not declared correctly.	At least one variable declared correctly.	**Not provided.**	
Cursor & SELECT Statement	**8 - 10**	**5 - 7**	**1 -4**	**0**	
	Correct type of cursor used; Cursor correctly implemented; SELECT statement correctly used; Correct Columns used; Correct tables used & linked correctly.	**At least one of the following are inadequate/not implemented**; Correct type of cursor used; Cursor correctly implemented; Select statement incorrectly used; Correct Columns used; Correct tables used; Tables linked correctly.	**At least two of the following are inadequate/not implemented;** Correct type of cursor used; AND the following is inadequate/not implemented Cursor implementation; Use of Select statement.	**Not provided.**	
Output	**2**	**1**	**½**	**0**	
	Output Screenshot provided.	Correct output achieved; Screenshot not provided.	Correct output is not achieved; Output Screenshot provided.	**Not provided.**	
Comments	**4 - 5**	**3**	**1 -2**	**0**	
	Cursor correctly identified. Correct reasons provided. Information provided as a comment at the end of the code.	**Minor changes required**	**Major changes required**	**Not provided.**	

Question 7 Mark Allocation	Levels of Achievement				Feedback
PL/SQL Query	Excellent	Good	Developing	Poor	
	Score Ranges Per Level (½ marks possible)				
Declarations & Variables	**3**	**2**	**1**	**0**	
	Correct variables declared.	All variables declared; One variable is inadequate/not declared correctly.	At least one variable declared correctly.	Not provided.	
Cursor & SELECT Statement	**8 - 10**	**5 - 7**	**1 -4**	**0**	
	Correct type of cursor used; Cursor correctly implemented; SELECT statement correctly used; Correct Columns used; Correct tables used & linked correctly.	**At least one of the following are inadequate/not implemented**; Correct type of cursor used; Cursor correctly implemented; Select statement incorrectly used; Correct Columns used; Correct tables used; Tables linked correctly.	**At least two of the following are inadequate/not implemented**; Correct type of cursor used; AND the following is inadequate/not implemented Cursor implementation; Use of Select statement.	Not provided.	
Output	**2**	**1**	**½**	**0**	
	Correct output achieved; Output Screenshot provided.	Correct output achieved; Output Screenshot not provided.	Correct output is not achieved; Output Screenshot provided.	Not provided.	

Question 8 Mark Allocation	Levels of Achievement				Feedback
	Excellent	**Good**	**Developing**	**Poor**	
	Score Ranges Per Level (½ marks possible)				
VIEW Statement	**3**	**2**	**1**	**0**	
	Correct VIEW statement used and correctly implemented**.**	VIEW statement used, minor implementation errors.	VIEW statement used, major implementation errors.	Not provided**.**	
SELECT statements	**4 - 5**	**3**	**1 - 2**	**0**	
	Correct SELECT statement used. Correct columns	Correct SELECT statement used. At least one required column not selected;	SELECT statement used; Most required columns not selected**:** Required tables	Not Provided.	
	selected; tables correct	correct Tables mostly used and linked correctly; minor changes required	mostly used, links mostly correct; major changes required		
CODE to view output	**2**	**1**	**½**	**0**	
	Correct Code to view output is provided.	Code to view output is provided; Minor errors in code.	Code to view output is provided; Major errors in code.	No code provided.	
OUTPUT	**2**	**1**	**½**	**0**	
	Correct output achieved; Output Screenshot provided.	Correct output achieved; Output Screenshot not provided.	Correct output is not achieved; Output Screenshot provided.	Not provided.	